

CLAIMS

That which is claimed is:

1. A method of eliciting an immune response to a bacterial pathogen, the method comprising:

administering an incapacitated whole cell bacterial composition to a subject susceptible to a disease caused by a pathogenic bacterium, wherein the composition comprises a bacterium incapacitated by expression from a recombinant promoter, said expression being sufficient to incapacitate the bacterium; said administering being in an amount effective to elicit an immune response to the pathogenic bacterium in the host.

2. The method of claim 1, wherein the pathogenic bacterium is of a genus selected from the group consisting of *Mycobacteria*, *Staphylococci*, *Vibrio*, *Enterobacter*, *Enterococcus*, *Escherichia*, *Haemophilus*, *Neisseria*, *Pseudomonas*, *Shigella*, *Serratia*, *Salmonella*, *Streptococcus*, *Klebsiella* and *Yersinia*.

3. The method of claim 1, wherein the recombinant promoter is operably linked to a recombinant polynucleotide encoding a recombinant protein other than a viral protein of a virus that infects a mammalian cell.

4. The method of claim 3, wherein the recombinant protein is a protein that binds lipopolysaccharide, including a lipopolysaccharide-binding protein (LBP) or an LPS-binding domain thereof.

5. The method of claim 1, wherein the recombinant promoter is a strong bacteriophage promoter.

6. The method of claim 5, wherein the bacterium is further modified to express a bacteriophage RNA polymerase for transcription from the bacteriophage promoter.

7. The method of claim 6, wherein the bacteriophage RNA polymerase is operably linked to an inducible promoter.
8. The method of claim 7, wherein the bacteriophage promoter is a T7 promoter and the bacteriophage RNA polymerase is a T7 RNA polymerase.
9. A method of vaccinating a subject against disease caused by a bacterial pathogen, the method comprising:
administering to a subject susceptible to disease caused by a pathogenic bacterium an incapacitated whole cell bacterial vaccine, the vaccine comprising the pathogenic bacterium incapacitated by expression from a recombinant promoter, said administering being in an amount effective to elicit an immune response to the pathogenic bacterium in the subject.
10. The method of claim 9, wherein the recombinant promoter is operably linked to a recombinant polynucleotide encoding a recombinant protein other than a viral protein of a virus that infects a mammalian cell.
11. The method of claim 10, wherein the recombinant protein is a protein that binds lipopolysaccharide.
12. The method of claim 11, wherein the protein comprises a lipopolysaccharide-binding protein (LBP) or an LPS-binding domain thereof.
13. The method of claim 9, wherein the recombinant promoter is a strong bacteriophage promoter and the bacterium is further modified to express a bacteriophage RNA polymerase for transcription from the bacteriophage promoter.
14. The method of claim 13, wherein the bacteriophage RNA polymerase is operably linked to an inducible promoter.

15. The method of claim 14, wherein the bacteriophage promoter is a T7 promoter and the bacteriophage RNA polymerase is a T7 RNA polymerase.

16. A method for eliciting an immune response to an antigen, the method comprising:

administering to a subject an incapacitated whole cell bacterial composition, wherein the composition comprises a bacterium incapacitated by expression from a recombinant promoter, said administering being in an amount effective to elicit an immune response in the subject to an antigen present in or on the bacterium.

17. The method of claim 16, wherein:

(a) the recombinant promoter is operably linked to a recombinant polynucleotide encoding a recombinant protein other than a viral protein of a virus that infects a mammalian cell, including wherein the recombinant protein is the antigen;

(b) the antigen is an endogenous bacterial antigen, including wherein the recombinant protein is a protein that binds lipopolysaccharide, such as a lipopolysaccharide-binding protein (LBP) or an LPS-binding domain thereof; or

(c) the antigen is an endogenous bacterial antigen.

18. The method of claim 17, wherein the recombinant promoter is a strong bacteriophage promoter and the bacterium is further modified to express a bacteriophage RNA polymerase for transcription from the bacteriophage promoter.

19. The method of claim 18, wherein the bacteriophage RNA polymerase is operably linked to an inducible promoter.

20. The method of claim 19, wherein the bacteriophage promoter is a T7 promoter and the bacteriophage RNA polymerase is a T7 RNA polymerase.